AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of claims:

Claims 1 to 17 (Canceled)

18. (CURRENTLY AMENDED)) A spin valve giant magnetoresistance (SVGMR) sensor comprising:

a seed layer over a substrate, said seed layer formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys;

a metal oxide buffer layer over the seed layer; ~~said metal oxide buffer layer comprised of NiO or alpha Fe_2O_3;~~ said metal oxide buffer layer is comprised of alpha - Fe_2O_3 and has a thickness of between about 5 to 15 Å;

a free ferromagnetic layer over said metal oxide buffer layer; said metal oxide buffer layer and said free ferromagnetic layer have about the same crystal lattice constants; and said metal oxide buffer layer and said free ferromagnetic layer have the same crystal structure;

a non-magnetic conductor spacer layer over said free ferromagnetic layer;

a pinned ferromagnetic layer over the non-magnetic conductor spacer layer ; and

a pinning material layer over the pinned ferromagnetic layer; and

a capping layer over said pinning material layer.

19. (PREVIOUSLY PRESENTED) The spin valve giant magnetoresistance (SVGMR) sensor of claim 18 which further includes: a high conductivity layer on said metal oxide buffer layer and said free ferromagnetic layer on said high conductivity layer .

20. (original) The spin valve giant magnetoresistance (SVGMR) sensor of claim 18 which further includes: a high conductivity layer on said metal oxide buffer layer and said free ferromagnetic layer on said high conductivity layer (HCL); said high conductivity layer is comprised of Cu or Cu-Ni and has a thickness between 10 and 30Å.

21. (PREVIOUSLY PRESENTED) The method of claim 18 wherein said pinned ferromagnetic layer is composed of a three layer structure comprising: (a) a lower AP layer, a middle non-magnetic conductor spacer layer and a upper AP layer wherein said middle non-magnetic conductor spacer layer induces anti-ferromagnetic coupling between said lower AP layer and said upper AP layer which enhances the Pinning effect.

22. (ORIGINAL) The spin valve giant magnetoresistance sensor of claim 18 wherein said pinned ferromagnetic layer is composed of a three layer structure comprising: (a) a lower AP layer, (b) a Ru layer and (c) an upper AP layer wherein said Ru layer induces anti-ferromagnetic coupling between said lower AP layer and said AP upper which enhances the pinning effect and where said lower AP layer and said upper AP layer have a thickness of between about 5 and 20 Å and are comprised of CoFe and said Ru layer has a thickness of between about 5 and 10 Å

23. (ORIGINAL) The spin valve giant magnetoresistance sensor of claim 18 wherein said seed layer is comprised of: NiFeCr.

Claim 24 (canceled).

25. (PREVIOUSLY PRESENTED) The spin valve giant magnetoresistance sensor of claim 18 wherein said free ferromagnetic layer is comprised of: CoFe, CoFe/NiFe, or Co/NiFe and has a thickness of 20 to 30 Å.

26. (ORIGINAL) The spin valve giant magnetoresistance sensor of claim 18 wherein said non-magnetic conductor spacer layer is composed of Cu having a thickness of between about 20 and 30 Å .

27. (ORIGINAL) The spin valve giant magnetoresistance sensor of claim 18 wherein the free ferromagnetic material layer and the pinned ferromagnetic material layer are each formed of a

ferromagnetic material selected from the group consisting of nickel, iron and cobalt ferromagnetic materials, alloys thereof, laminates thereof and laminates of alloys thereof.

28. (ORIGINAL) The spin valve giant magnetoresistance (SVGMR) sensor of claim 18 wherein said pinned ferromagnetic layer is comprised of a material selected from the group consisting of CoFe, and Co; and has a thickness of between about 10 and 30 Å.

29. (ORIGINAL) The spin valve giant magnetoresistance (SVGMR) sensor of claim 18 wherein a pinning material layer is comprised of a material selected from the group consisting of MnPt, IrMn, and MnNi; and has a thickness of between about 50 and 300 Å.

30. (ORIGINAL) The spin valve giant magnetoresistance (SVGMR) sensor of claim 18 wherein said capping layer consists of a material selected from the group consisting of: MiFeCo, NiCr, and Ta , and has a thickness of between about 40 and 60 Å.

Claims 31 to 35 (canceled).

36. (PREVIOUSLY PRESENTED) The spin valve giant magnetoresistance sensor of claim 18 wherein said seed layer being formed of a material selected from the group consisting of nickel chromium alloys, nickel -chromium-copper alloys and nickel-iron-chromium alloys.